



## Ching-Cheng Chang

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Dr. Ching-Cheng Chang holds a Bachelor and Master degree in Agricultural Economics from National Taiwan University, and a Ph.D. degree in Agricultural Economics and Rural Sociology from Pennsylvania State University of the United States. Her main research interests include:

- Assessing the economic impact of public policies and free trade negotiations on sustainable usage of natural resources and production decisions involved in the agriculture and food sector.
- Global climate change impact and related risk-reduction policies.
- Trade policies and market structure of international commodity market.

She has several on-going projects on global climate change impact assessment and related adaptation policies using integrated partial and general equilibrium models. She also participates in several APEC projects on food security, including "Strengthening the APEC Food Emergency Response Mechanism: Socio-Economic Impact Assessment and Cost-Benefit Analysis", "Innovation for Women and Economic Development: Facilitating Women's Livelihood Development and Resilience with ICTs", and "Strengthening Public-Private Partnership to Reduce Food Losses in the Supply Chain". She has published widely with more than 60 articles in international refereed journals. She is also the co-editor of a book: *Global Warming and the Asian Pacific* (2003) and a few book chapters.

### *ICT innovation and economic development - Gender inclusiveness perspectives*

Today, our communities are facing several global challenges, such as climate change, natural disasters, food security, gender equality, human rights, and youth employment. ICTs are important tools that raise the skill-level of human resource and productivity which enables us to address these challenges. ICTs are also instrumental in providing women access to lifelong learning, to productive assets, to credit, and most of all, the business network and entrepreneurship. On June 2012, Taiwan launched a multi-year project in APEC entitled "Innovation for Women and Economic Development: Facilitating Women's Livelihood Development and Resilience with ICT" to promote awareness of women's needs to embrace new devices and services for livelihood development. The research consists of three phases. In phase one, an inventory and a comparative case study were conducted to examine past and ongoing projects seeking to facilitate women's economic empowerments through the harnessing of ICT-enabled tools in four APEC economies. We found that ICT-related projects positively influenced female entrepreneurs in many respects. We also identified several difficulties women entrepreneurs faced when acquiring knowledge. Access to capital was considered to be the root causes behind all difficulties. In the second phase, a quasi-experiment in five APEC economies was conducted to discover possibilities for e-learning to empower women entrepreneurs. We also explored lessons drawn from recent experiences in crowdfunding as a new innovative ICT platform for startups run by women. Our experiment showed that work-life balance and gender discrimination are no longer the main obstacles for women entrepreneurs. Women entrepreneurs perceived access to capital and access to market to be their major challenges in business survival and/or expansion. Since e-learning provides opportunities that might not be otherwise available, we recommend greater involvement of women specializing in ICT or women in ICT-related businesses to design e-learning programs that will help women entrepreneurs overcome those challenges.